California Department of Education
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ADDENDUM TO THE
CALIFORNIA MODIFIED ASSESSMENT (CMA)
TECHNICAL REPORT
SPRING 2011 ADMINISTRATION

The purpose of this addendum to the California Modified Assessment Technical Report for the Spring 2011 Administration is to provide the raw-score-to-scale-score conversions and analyses for estimating the reliability of classification decisions. These analyses were completed following the adoption of the CMA performance levels for English–language arts (grades ten and eleven) and Geometry by the State Board of Education in November 2011.

Score Conversion Tables

In 2011 August, a standard setting for the California Modified Assessment (CMA) was conducted to establish performance-level cut scores for high school phase 2 (English–Language Arts [ELA] for grades ten and eleven and end-of-course [EOC] Geometry). These cut scores were adopted and will be implemented for spring 2012 operational administration. In this addendum, data from the spring 2011 operational administration were used to assess the impact of these cut scores.

In Table 1 through Table 3, the cut scores are identified in the raw-score-to-scale-score conversion tables for these tests. Also shown are the percentages of students based on P1 data from the spring 2011 administration in each performance level defined by the cut scores. P1 data contained almost 100 percent of the test results of the entire test-taking population.

Table 1. 2011 Standard Setting Performance Levels and Impact Results: ELA, Grade Ten

Raw Score	Scale Score	CSEM	Performance Level	% Students at Performance Level
60	600	60		
59	600	60		
58	600	60		
57	593	59		
56	563	51		
55	539	46		
54	519	43		
53	501	40	Advanced	3.95%
52	486	38		
51	472	36		
50	459	35		
49	447	33		
48	436	32		
47	426	31		
46	416	31		
45	407	30		
44	398	29		
43	389	29		
42	381	28		
41	373	28	Proficient	12.92%
40	365	28		
39	358	27		
38	350	27		
37	343	27		
36	335	27		
35	328	27		
34	321	26	Basic	23.39%
33	314	26		
32	307	26		
31	300	26		
30	293	26		
29	286	26		
28	279	26		
27	272	26	Below Basic	37.40%
26	265	26		
25	258	27		
24	251	27		
23	243	27		

Raw Score	Scale Score	CSEM	Performance Level	% Students at Performance Level
22	236	27		
21	228	27		
20	221	28		
19	213	28		
18	204	29		
17	196	29		
16	187	30		
15	178	30		
14	169	31		
13	159	32		
12	150	32		
11	150	32	Far Below Basic	22.34%
10	150	32		
9	150	32		
8	150	32		
7	150	32		
6	150	32		
5	150	32		
4	150	32		
3	150	32		
2	150	32		
1	150	32		
0	150	32		

Table 2. 2011 Standard Setting Performance Levels and Impact Results: ELA, Grade Eleven

Raw Score	Scale Score	CSEM	Performance Level	% Students at Performance Level
60	600	59		
59	600	59		
58	600	59		
57	600	59		
56	574	53		
55	549	47		
54	528	44		
53	511	41		
52	495	39	Advanced	2.34%
51	481	37		
50	468	35		
49	456	34		
48	445	33		
47	434	32		
46	425	31		
45	415	31		
44	406	30		
43	397	29		
42	389	29		
41	381	29		
40	373	28	Proficient	7.99%
39	365	28		
38	357	28		
37	350	27		

Raw Score	Scale Score	CSEM	Performance Level	% Students at Performance Level
36	343	27		
35	335	27		
34	328	27		
33	321	27	Basic	20.81%
32	314	27		
31	307	27		
30	300	27		
29	293	27		
28	286	27		
27	279	27		
26	272	27	Below Basic	37.28%
25	265	27		
24	257	27		
23	250	27		
22	242	28		
21	235	28		
20	227	28		
19	219	29		
18	211	29		
17	202	30		
16	194	30		
15	185	31		
14	175	31		
13	165	32		
12	155	33		
11	150	34	Far Below Basic	31.57%
10	150	34		
9	150	34		
8	150	34		
7	150	34		
6	150	34		
5	150	34		
4	150	34		
3	150	34		
2	150	34		
1	150	34		
0	150	34		

Table 3. 2011 Standard Setting Performance Levels and Impact Results: Geometry

Raw Score	Scale Score	CSEM	Performance Level	% Students at Performance Level
60	600	71		
59	600	71		
58	559	55		
57	527	46		
56	503	40		
55	484	36	Advanced	2.02%
54	468	33		
53	455	31		
52	443	29		
51	432	28		
50	422	27		
49	413	26		

Raw Score	Scale Score	CSEM	Performance Level	% Students at Performance Level
48	405	25		
47	397	24		
46	389	24		
45	382	23		
44	375	23	Proficient	9.03%
43	369	22		
42	362	22		
41	356	22		
40	350	21		
39	344	21		
38	338	21		
37	333	21		
36	327	21		
35	322	21	Basic	24.07%
34	316	20		
33	311	20		
32	305	20		
31	300	20		
30	295	20		
29	289	20		
28	284	20		
27	279	20		
26	273	20	Below Basic	41.28%
25	268	21		
24	262	21		
23	257	21		
22	251	21		
21	245	21		
20	239	21		
19	233	22		
18	227	22		
17	221	22		
16	214	23		
15	207	23		
14	200	24		
13	192	24		
12	184	25		
11	176	26	Far Below Basic	23.60%
10	167	27		
9	157	28		
8	150	29		
7	150	29		
6	150	29		
5	150	29		
4	150	29		
3	150	29		
2	150	29		
1	150	29		
0	150	29		

Decision Classification Analyses

The methodology used for estimating the reliability of classification decisions is described in Livingston and Lewis (1995) and is implemented using the ETS-proprietary computer program RELCLASS-COMP (Version 4.14).

Decision accuracy describes the extent to which examinees are classified in the same way as they would be on the basis of the average of all possible forms of a test. Decision accuracy answers the following question: How does the actual classification of test takers, based on their single-form scores, agree with the classification that would be made on the basis of their true scores, if their true scores were somehow known? RELCLASS-COMP also estimates decision accuracy using an estimated multivariate distribution of reported classifications on the current form of the exam and the classifications based on an all-forms average (true score).

Decision consistency describes the extent to which examinees are classified in the same way as they would be on the basis of a single form of a test other than the one for which data are available. Decision consistency answers the following question: What is the agreement between the classifications based on two non-overlapping, equally difficult, forms of the test? RELCLASS-COMP also estimates decision consistency using an estimated multivariate distribution of reported classifications on the current form of the exam and classifications on a hypothetical alternate form using the reliability of the test and strong true- score theory.

In each case, the proportion of classifications with exact agreement is the sum of the entries in the diagonal of the contingency table representing the multivariate distribution. Reliability of classification at a cut score is estimated by collapsing the multivariate distribution at the passing score boundary into an *n* by *n* table (where *n* is the number of performance levels) and summing the entries in the diagonal. Figure 1 and Figure 2 present the two scenarios graphically.

Figure 1 Decision Accuracy for Achieving a Performance Level

		Decision made on a form actually taken	
		Does not achieve a performance level	Achieves a performance level
True status on all-forms average	Does not achieve a performance level	Correct classification	Misclassification
	Achieves a performance level	Misclassification	Correct classification

Figure 2 Decision Consistency for Achieving a Performance Level

		Decision made on the alternate form taken	
		Does not achieve a performance level	Achieves a performance level
Decision made on the form taken	Does not achieve a performance level	Correct classification	Misclassification
	Achieves a performance level	Misclassification	Correct classification

The results of spring 2011 CMA analysis are presented in Table 4 through Table 6.

Each table includes the contingency tables for both accuracy and consistency of the various performance-level classifications. The proportion of students being accurately classified is determined by summing across the diagonals of the upper tables; these proportions ranged from 0.63 to 0.67 across all of the CMA tests. The proportion of students that were classified consistently (diagonals of the lower tables) was from 0.51 to 0.56 across all proficiency levels for these CMA tests.

The classifications are collapsed to below-proficient versus proficient and above, which are the critical categories for Adequate Yearly Progress (AYP) calculations, the proportion of students that were classified accurately ranged from 0.92 to 0.94 across all CMA. Similarly, the proportion of students that are classified consistently ranged from 0.89 to 0.92 for students classified into below-proficient versus proficient and advanced.

Please note that there might be inconsistencies in data that appear in the "Total" due to rounding.

Table 4. Reliability of Classification for ELA Grade Ten

	Placement Score	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Category Total
Decision Accuracy	45 – 60	0.02	0.02	0.00	0.00	0.00	0.04
	38 – 44	0.01	0.07	0.05	0.00	0.00	0.13
	31 – 37	0.00	0.03	0.14	0.07	0.00	0.23
	23 – 30	0.00	0.00	0.05	0.26	0.06	0.37
All-forms Average	0 – 22	0.00	0.00	0.00	0.08	0.14	0.22
	Estimated Proportion Correctly Classified: Total = 0.63, Proficient & Above = 0.92						
Decision Consistency	45 – 60	0.02	0.02	0.00	0.00	0.00	0.04
	38 – 44	0.02	0.06	0.04	0.01	0.00	0.13
	31 – 37	0.00	0.04	0.11	0.07	0.01	0.23
	23 – 30	0.00	0.01	0.07	0.20	0.09	0.37
Alternate Form	0 – 22	0.00	0.00	0.01	0.09	0.13	0.22
	Estimated Proportion Consistently Classified: Total = 0.51, Proficient & Above = 0.89						

Table 5. Reliability of Classification for ELA Grade Eleven

	Placement Score	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Category Total
Decision Accuracy	44 – 60	0.01	0.01	0.00	0.00	0.00	0.02
	37 – 43	0.00	0.04	0.03	0.00	0.00	0.08
	30 – 36	0.00	0.02	0.12	0.07	0.00	0.21
	23 – 29	0.00	0.00	0.05	0.24	0.09	0.37
All-forms Average	0 – 22	0.00	0.00	0.00	0.09	0.22	0.32
	Estimated Proportion Correctly Classified: Total = 0.63, Proficient & Above = 0.94						
Decision Consistency	44 – 60	0.01	0.01	0.00	0.00	0.00	0.02
	37 – 43	0.01	0.03	0.03	0.01	0.00	0.08
	30 – 36	0.00	0.03	0.09	0.07	0.01	0.21
	23 – 29	0.00	0.01	0.07	0.18	0.11	0.37
Alternate Form	0 – 22	0.00	0.00	0.01	0.11	0.19	0.32
	Estimated Proportion Consistently Classified: Total = 0.51, Proficient & Above = 0.92						

Table 6. Reliability of Classification for Geometry

	Placement Score	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Category Total
Decision Accuracy	49 – 60	0.00	0.01	0.01	0.01	0.00	0.02
	40 – 48	0.00	0.05	0.04	0.00	0.00	0.09
	31 – 39	0.00	0.00	0.20	0.04	0.00	0.24
	23 – 30	0.00	0.01	0.08	0.27	0.05	0.41
All-forms Average	0 – 22	0.00	0.00	0.00	0.08	0.16	0.24
	Estimated Proportion Correctly Classified: Total = 0.67, Proficient & Above = 0.93						
Decision Consistency	49 – 60	0.00	0.01	0.01	0.01	0.00	0.02
	40 – 48	0.00	0.05	0.04	0.00	0.00	0.09
	31 – 39	0.00	0.02	0.16	0.06	0.00	0.24
	23 – 30	0.00	0.02	0.10	0.21	0.08	0.41
Alternate Form	0 – 22	0.00	0.00	0.01	0.08	0.15	0.24
	Estimated Proportion Consistently Classified: Total = 0.56, Proficient & Above = 0.91						

Reference

Livingston, S. A., & Lewis, C. (1995). Estimating the consistency and accuracy of classification based on test scores. *Journal on Educational Measurement*, *32,* 179–97.